# PATENT COOPERATION TREATY



# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| Applicant's or agent's file reference<br>3204-01 | **FOR FURTHER ACTION** | See Form PCT/IPEA/416 |
|---|---|---|
| International application No.<br>PCT/US 03/34851 | International filing date *(day/month/year)*<br>28.10.2003 | Priority date *(day/month/year)*<br>30.10.2002 |
| International Patent Classification (IPC) or national classification and IPC<br>C08F20/58 | | |
| Applicant<br>THE LUBRIZOL CORPORATION et al. | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 2 sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

| | | |
|---|---|---|
| ☒ | Box No. I | Basis of the opinion |
| ☐ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

| Date of submission of the demand | Date of completion of this report |
|---|---|
| 11.05.2004 | 20.09.2004 |
| Name and mailing address of the international preliminary examining authority:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br>Giesemann, G<br>Telephone No. +49 89 2399-8517 |

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US 03/34851

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

   **Description, Pages**

   1-18 as originally filed

   **Claims, Numbers**

   1-18 received on 17.08.2004 with letter of 17.08.2004

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-18 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | 1-18 |
| | No: | Claims | |
| Industrial applicability (IA) | Yes: | Claims | 1-18 |
| | No: | Claims | |

2. Citations and explanations (Rule 70.7):

**see separate sheet**

D1: EP-A-0 256 312 (CHEMISCHE FABRIK STOCKHAUSEN GMBH) 24 February 1988 (1988-02-24)
D2: US-A-3 772 142 (R. H. DOGGETT) 13 November 1973 (1973-11-13)
D3: GB-A-1 329 565 (BAYER AG) 12 September 1973 (1973-09-12)
D4: US-A-5 350 801 (A. FAMILI) 27 September 1994 (1994-09-27)
D5: US-A-5 376 148 (P. SCHAFFLÜTZEL) 27 December 1994 (1994-12-27)

1. None of the documents cited suggest the present composition comprising a sulfonic dispersant with a molecular wieght less than 500 as now claimed together with components a) and b) (Art. 33(3) PCT).

2. D1 relates to an amphoteric polymer whereby nowhere a component having a molecular weight of less than 500 is mentioned, see mainly claims 1 and 2.

   D2 relates to a homopolymer of sodium-AMPS in which nowhere the use of a component of a Mw of less than 500 is mentioned.

   The other documents cited are only background art.

3. The present composition can be used for the manufacturing of e.g. fiberglass mats having good strength results as shown by way of examples, see e.g. the explanations at page 17 of the present description.

3204-01

What is claimed is:

1. A composition comprising:

(a) a liquid carrier;

(b) fibers or particles dispersed or suspended therein; and

(c) a sulfonic dispersant with a molecular weight less than 500 suitable for wetting, dispersing or suspending said fibers in said aqueous liquid carrier; provided that when (b) is particles, then the amount of (c) is up to about 5% by weight of the composition.

2. The composition of claim 1 wherein the liquid carrier comprises water.

3. The composition of claim 1 wherein the liquid carrier comprises water and at least one co-solvent.

4. The composition of claim 3 wherein the co-solvent comprises an alcohol, acetone or dimethylformamide or combination thereof.

5. The composition of claim 1 wherein the liquid carrier comprises an alcohol, acetone or dimethylformamide or combination thereof.

6. The composition of claim 1 wherein the fiber is selected from the group consisting of fiberglass, microglass, carbon fibers, coated carbon fibers, polyester fibers, polyimide fibers, polyamide fibers, acrylic fiber, cellulose fiber, polyethylene, polypropylene, rayon, nylon, asbestos and polyvinyl chloride fiber.

7. The composition of claim 6 wherein the fiber is fiberglass.

8. The composition of claim 1 wherein the particles are selected from the group consisting of glass, glass microballons, alumina, basalt, silica, carbon black, titanium dioxide, and gypsum.

9. The composition of claim 1 wherein the sulfonic dispersant comprises a hydrocarbylamido-alkanesulfonic acid or a salt thereof.

10. The composition of claim 9 wherein the sulfonic dispersant is 2 acrylamido-2-methylpropane sulfonic acid or a salt thereof.

11. The composition of claim 1, wherein the sulfonic dispersant is present in an amount of about 10-1000 ppm.

12. The composition of claim 1, further comprising an additive to modify the pH of said composition to a desired pH range.

13. The composition of claim 12, wherein the pH range is about 1-11.

14. The composition of claim 1, further comprising incorporating into the composition a thickener, a biocide, a binder or a defoamer.

15. A method for suspending or dispersing fibers or particles in an aqueous liquid carrier, comprising the step combining:

(a) combining

(i) an aqueous liquid carrier

(ii) fibers or particles ; and

(iii) a sulfonic dispersant with a molecular weight less than 500 suitable for wetting, dispersing or suspending said fibers in said aqueous liquid carrier; provided that when (a)(ii) is particles, then the amount of (a)(iii) is up to about 5% by weight of the composition; and

(b) mixing the resulting composition.

16. A composition comprising:

(a) water;

(b) glass fibers; and

(c) 2-acrylamido-2-methylpropane sulfonic acid or a salt thereof.

17. The composition of claim 16 wherein said 2-acrylamido-2-methylpropane sulfonic acid or salt thereof is present in an amount of about 25-400ppm.

18. A method for preparing a non-woven mat of fibrous material, comprising the steps of:

(a) combining

(i) an aqueous medium ;

(ii) fibers; and

(iii) a sulfonic dispersant with a molecular weight less than 500 suitable for wetting, dispersing or suspending said fibers in said aqueous medium;

(b) mixing the resulting composition;

(c) transferring said composition to a mat-forming device; and

(d) removing the aqueous medium from the composition.